

Omnia.9sg

Stereo Generator with Psychoacoustically-Controlled
Distortion Masking Clipper



Quick Start Setup Guide

SW Version 3.19.39 | January 2019

For part numbers: 2001-00420-000, 2001-00495-000

ATTENTION!

This quick start guide is intended to aid with basic deployment of the Omnia.9sg.
For further support and/or questions please contact support@telosalliance.com



THE TELOS ALLIANCE®

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IMPORTANT SAFETY INFORMATION ABOUT YOUR NEW PRODUCT

We know you're eager to get your new gear up and running. But first, The Telos Alliance strongly suggests you use an Uninterruptible Power Supply (UPS), with power line filtering, to prevent damage in case of electrical storms or power surges. Your Product Warranty (found in the User Manual) does not cover lightning damage!

Information about lightning protection can be found at:

<http://blogs.telosalliance.com/tech/surge-suppression-pointers>

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The Telos Alliance

Quick Start Setup Guide

We've prepared this preliminary Quick Start Setup Guide to get you and your new Omnia.9sg up and running as quickly as possible.

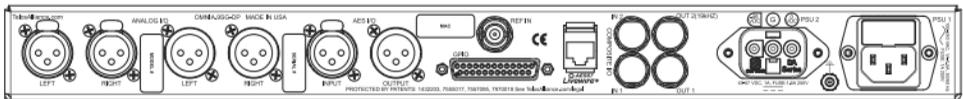
It is deliberately brief and does not provide a full explanation of all available controls and settings, so we strongly recommend reading the complete user manual when time allows, available at <https://www.telosalliance.com/Omnia/Omnia9sg>

Omnia.9sg is a slim 1RU design so it doesn't take up much vertical rack space, but it is deep. Accordingly, you may wish to enlist the help of an assistant when racking it up and ensure there's nothing to obstruct it toward the back of the rack.

The unit is fan cooled but leaving an empty rack space directly above and below it is still good practice for both Omnia.9sg and the equipment directly above and below it. Air is drawn in via an intake near the front right side of the unit (looking at the front panel) and exhausted near the front left side, so ensure there are no obstructions around these areas that would impede air flow.



Omnia.9sg, standard Dual AC unit



Omnia.9sg-DP, AC+48VDC powered unit

Physical Installation

Connect power to both of the internal power supplies. There is no power switch. For customers using the AC-DC dual supply, ensure power voltage is within the specified range of 40-57 VDC, 1A. (The **≡** symbol, if used, indicates a direct current supply). The DC supply must have external current control limiting the total power available to 240VA or less. An external 4A fuse is required on the DC supply.

It is always possible for a power supply to fail; having redundant supplies helps protect you in the unlikely event that one of the internal supplies fails. In reality, external power source failure is far more likely. Best engineering practice is that each supply should be fed from a different source. At minimum we recommend that each source should be fed through a good quality UPS with adequate surge protection. In an ideal world, each source would be fed from a completely different isolated circuit for maximum redundancy.

Next, connect the audio inputs as appropriate for your installation. Omnia.9sg accepts balanced professional line-level analog audio via its Left and Right Analog Inputs and AES/EBU digital audio on standard XLR connectors via its AES inputs. Audio can also be provided via Livewire.

Two composite (MPX) inputs are also provided and can accept a full MPX signal from the composite output of another processor.

In the event of a power or system failure, Omnia.9sg provides a hard relay bypass. When the bypass relay is engaged, MPX Input 1 is directly connected to MPX Output 1 while MPX Input 2 is directly connected to MPX Output 2. This feature makes it possible to take the composite output of a hot backup processor or stereo generator and feed it into the MPX input so that it passes through the corresponding MPX Output in the unlikely event of power or system failure.

The main AES XLR input can accept audio with or without a clock reference of between 32kHz and 96kHz. If necessary, the built-in sample rate converter (SRC) on this input will up- or down-convert to the fixed system standard of 48kHz.

A dedicated external reference input is provided on the rear panel via a BNC connector should it be necessary to sync to a clock that is not present on the incoming AES audio signal, but this must be a 48kHz signal as no SRC is present on the BNC input. An adapter (Pin 2 hot, Pin 3 shield) may be used for short cable runs without concern. For longer runs, a transformer may be used.

Front Panel Control, Menu Navigation, and Password



Using the Rotary Encoder

Much like our Omnia.7 processor, Omnia.9sg uses a “joystick” type of rotary encoder for menu navigation and control adjustment on the front panel.

- “Rocking” the control left, right, up or down facilitates navigation through the various menus. In lower level menus, a Right command is a backspace, while a Left command is Enter or proceed.
- Turning the knob clockwise or counterclockwise scrolls through tables and adjusts individual controls. Turn the knob to rapidly navigate through the alpha-numeric selector page.
- Push the rotary control in to press “Enter”. This “Enter” action usually has the same function as rocking the control to the right.

Unlocking the Unit

For newcomers, navigating using the Rotary Encoder can take some getting used to. Getting past the password lock provides a first step to becoming familiar with navigation tools. This step-by-step guide will help give you an orientation.



LOCK STATUS
PASSWORD ENTRY BOX
UNLOCK CONTROL

- Rock the rotary encoder up/down control so you highlight (draw the grey outline) around the Password entry box.
- Press Enter to proceed to the Alpha-numeric selection page.
- Turn the knob to select letters and numbers, then press Enter to “type” characters. The factory default password is “1234”. When you are finished entering your password, scroll to “OK” and press Enter. This will return you to the screen above, and you’ll see hidden characters <....> in the Password entry box.
- Rock the control down to highlight the Unlock control, then press Enter. If your password was valid, this will take you to the 9sg System Menu.

Once you are in the System menu, use the same controls to navigate through choices, and familiarize yourself with the menu structure. In many cases, you may simply want to proceed to the **System/ System Config/IP Config** menu to set network addresses, then use NfRemote for the rest of your setup. Note that the unit will always lock itself when the display times out and goes dark. The length of time before this happens is adjustable in the **System > System Config > Power** menu. The default timeout is the maximum 24-hour duration.

While front panel navigation is always an option, primary setup and configuration is much more easily accomplished via the free NfRemote software application available from the Omnia.9sg product page on the TelosAlliance.com website. All screenshots and visual references within this document are taken directly from the NfRemote interface. NfRemote allows you to quickly navigate all the layers of 9sg software, and provides a richer, more complete display of controls. We recommend you use NfRemote as your primary interface with the unit.

Front Panel LEDs

The front panel features four LEDs that serve as status indicators for various audio and hardware conditions.



The top two LEDs denote audio conditions and alarms, the “Audio Source Warning” and “Audio Quality Warning” indicators. The bottom two are system status and alert indicators, “System Warning 1” and “System Warning 2”.

In normal operation, all indicators will show green. The meanings of various colors and combinations are explained below in an easy-to-follow diagram.

Normal Operation		Primary Audio Failure Secondary Input Active		Local Audio Insertion Active	
Audio Source Warning		Audio Source Warning		Audio Source Warning	
Audio Quality Warning		Audio Quality Warning		Audio Quality Warning	
System Warning 1		System Warning 1		System Warning 1	
System Warning 2		System Warning 2		System Warning 2	
Internal Player Active		Complete Loss of Source Audio		3dB Channel Imbalance for Over One Minute	
Audio Source Warning		Audio Source Warning		Audio Source Warning	
Audio Quality Warning		Audio Quality Warning		Audio Quality Warning	
System Warning 1		System Warning 1		System Warning 1	
System Warning 2		System Warning 2		System Warning 2	
Audio Input Overload		Chassis Cooling Fan Failure		CPU Overheating	
Audio Source Warning		Audio Source Warning		Audio Source Warning	
Audio Quality Warning		Audio Quality Warning		Audio Quality Warning	
System Warning 1		System Warning 1		System Warning 1	
System Warning 2		System Warning 2		System Warning 2	
Chassis Overheating					
Audio Source Warning					
Audio Quality Warning					
System Warning 1					
System Warning 2					

Configuring Network Settings and Installing NfRemote

Connect Omnia.9sg to your local network via the rear panel Ethernet connection. The unit is set up to receive an IP address via DHCP by default. Navigate to **System > System Configuration > IP Configuration** from the Main Menu and verify that an IP address has been assigned. This may take a minute or two depending upon your network. Note that the DHCP display will not show an IP address when unplugged from the network. Also note that for security purpose, the 9sg does not respond to Ping commands.

A static IP address can also be assigned by navigating to **System > System Configuration > IP Configuration > Use DHCP** and click the joystick right to un-check it. Then navigate down and click-right on the **IP:** box, enter the desired IP address and click-right on **OK** when done. Similarly, enter the Subnet Mask and other network parameters (if required). Finally, navigate to **Apply** and then click-down all the way past the warning text and you'll see **"Are you sure?"**; highlight the **Yes** box and click-right.

The NfRemote application may be downloaded from the Telos website at: <https://www.telosalliance.com/Omnia/Omnia9sg>

Copy the NfRemote application to a Windows laptop, desktop, or tablet. Double-click to begin the installation and follow the on-screen directions to complete it.

When the NfRemote connection screen appears, enter the IP address and password of your Omnia.9sg. You may also fill in a “friendly” name in the Comment field to help identify the unit.

Be sure to click on the dropdown menu to the far right of the connection window and choose the correct input method (local mouse, remote desktop/VM, touch screen, etc.)

You may click on the “Add” button to add this unit to a quick recall list in the bottom of the window or simply click “Connect”.

Once the connection is complete, the main Home screen will appear. Clicking the left mouse button highlights displays, menu items and controls. Clicking and holding the left mouse button while dragging adjusts sliding controls.

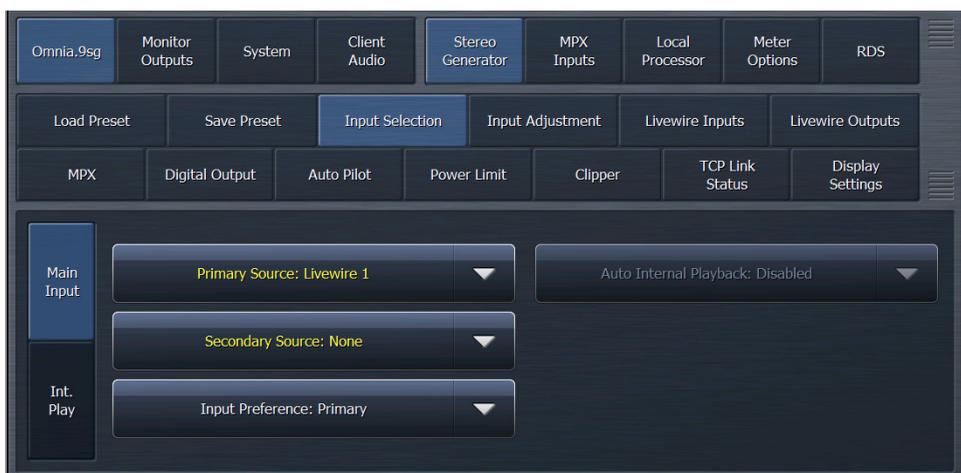
Configuring I/O Sources and Settings

Omnia.9sg makes the perfect “split chassis” solution for customers who want the benefits of having their main processor at the studio without sacrificing the advantages of having the composite generator at the transmitter.

Accordingly, its default settings presume that the “FM Pre-final L/R” output insert point found on Omnia.9 and Omnia.7 or the “PP” patch point output of the Omnia.11 (running version 3.0 software or higher) will be used to feed Omnia.9sg.

Select the Input Audio Source

Navigate to the **Omnia.9sg > Stereo Generator > Input Selection** menu and select the proper source (analog, AES digital, or Livewire) for the primary and/or backup inputs. Only the primary input is required. If a backup source is provided, it can be used as a failover source in the event of a loss of audio on the primary input.



Adjust the Input Gain

From the **Omnia.9sg > Stereo Generator > Input Adjustment** menu, set the “Input Gain” control as appropriate for your input source and processing needs.



NOTE:

The “Input Gain” control on Omnia.9sg adjusts the input drive level to the clipper and therefore replaces the more traditional and familiar “Clipper Drive” control found on a traditional FM processor. Accordingly, increasing this control increases clipper drive.

By default, this control is set to +12.5dB as it is presumed Omnia.9sg will normally be fed from an Omnia.9 using the “FM Pre-final L/R” patchpoint output which has been attenuated by the same amount to provide adequate headroom.

When set at the default level, this will exactly emulate the sound and behavior of a standalone Omnia.9 using its composite outputs. Accordingly, any adjustments to the Omnia.9’s “Final Clip Drive” control will yield identical results.

This setting also holds true if you are feeding Omnia.9sg from another processor with a similar “post-limiter, pre-clipper, pre-emphasis” patchpoint, providing it applies the same pre-attenuation.

If you are feeding the 9sg with a processor that does not have such a patchpoint, the best performance will be realized by using its HD output. The limiter drive on the processor feeding 9sg should be turned down well below where it would typically be run, since the final clipper in 9sg will do the “heavy lifting”, and take into account the pre-emphasis curve.

Finally, it is also possible to use a “flat” (non-pre-emphasized) FM output to feed Omnia.9sg or even a de-emphasized FM output (with the final clipper drive of the processor turned all the way down) but this approach would have a negative impact on overall audio quality due to the 15 kHz low pass filtering typically present in most processors. The 16.5 kHz low-pass filter of 9sg will allow significantly more high end through the system if it is fed directly without additional prior filtering.

Configure and Adjust the Output

Connect the audio outputs as appropriate for your installation.

Two composite outputs are provided to feed a main/backup composite STL or transmitter.``

Omnia.9sg also supports balanced professional line-level analog audio via its Left and Right Analog Outputs and AES/EBU digital output on standard XLR connectors via the AES output. The AES outputs can also be used to provide an Omnia Direct™ (composite over AES) signal.

Adjusting the Composite Output

To adjust the levels of each of the composite outputs, navigate to the **Omnia.9sg > Stereo Generator > MPX** menu and adjust the corresponding “MPX Output Level” sliders until the desired modulation is indicated on a dedicated, calibrated modulation monitor. The “Pilot Level” and “Pre-emphasis” controls are also found here. Details of other controls are explained in the full manual.



Using the Omnia Direct™ Output

If the AES outputs will be used to feed an Omnia Direct signal, navigate to the **Omnia.9sg > Stereo Generator > Digital Output** menu and choose the appropriate source to feed the digital output.



Adjusting FM Diversity Delay

If the output of Omnia.9sg needs to be delayed to match an HD signal, the adjustment can be made in the **Omnia.9sg > Stereo Generator > Input Adjust** menu. Separate adjustments are provided for the digital and analog inputs. Double-clicking on the “Diversity Delay” slider will provide coarse, medium, and fine adjustment sliders to make adjustment easier.



Using ITU-R BS.412 (MPX Power Limiting)

Omnia.9sg supports ITU-R BS.412, a regulatory mandate in some countries which requires that average MPX power be limited to a particular standard and measured with a rolling 60-second integration time.



If Omnia.9sg is used in conjunction with Omnia.7 or Omnia.9, the BS.412-specific presets in those processors should be used.

Any adjustments to the MPX power limiter should be made in the Omnia.9sg via the controls in the **Omnia.9sg > Stereo Generator > MPX Power Limit** menu. Please note that it may be necessary to set the “MPX Power Limit” slider to very different levels than the settings in the processor’s preset to achieve the same power output level.

For further details, download the full manual from <https://www.telosalliance.com/Omnia/Omnia9sg>



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